

March 1887.

Mr. Tebbutt, Winnecke's Comet.

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Comp. Star No.	R.A. 1886°.	Declination 1886°.	Authority.
<i>k</i>	<sup>h</sup> 22 <sup>m</sup> 31 <sup>s</sup> 13.30	−10° 51' 39".1	$\frac{1}{2}$ (Yarnall 9932 + Sant. 2550).
28	22 31 59.93	−10 25 27.6	9 $\frac{1}{2}$ mag. 1 Equat. diff. from * <i>l</i> .
<i>l</i>	22 36 30.73	−10 30 50.7	(= Lal. 44394-5) Paris Obs. 1862.
29	22 37 1.02	− 9 44 58.7	$\frac{1}{2}$ (Schj - Santini).
30	22 42 21.57	− 9 11 13.1	9 $\frac{1}{2}$ mag. Equat. diff. from * <i>m</i> .
<i>m</i>	22 45 48.20	− 9 9 45.1	Schjellerup 9365.
31	23 9 30.02	− 6 9 31.0	10 mag. Equat. Diff. from * <i>n</i> .
<i>n</i>	23 12 2.17	− 6 8 22.5	9 mag. Astr. Nach. lxxxvi. p. 215.
32	23 27 3.80	− 3 38 44.1	Karlsruhe Zones (Valentiner).
33	23 33 (22)	− 3 5	9 $\frac{1}{2}$ mag.

*Observations of Winnecke's Comet, 1886, made at Windsor, New South Wales. By John Tebbutt.*

Notice of the discovery of this comet at the Cape of Good Hope was received here on August 25. The comet was found on the same evening, and observations of it continued as long as possible. As it was at no time bright enough to admit of observation in an illuminated field, and there were no means of illuminating the threads of the filar micrometer on a dark field, I was obliged to have recourse to a dark field micrometer. Of the accompanying positions those for August were determined with a square bar-micrometer on the Cooke 4 $\frac{1}{2}$ -inch Equatorial. On Sept. 1 a ring-micrometer, whose mean radius = 242".6, was fitted to the recently mounted Grubb 8-inch Equatorial, and with this instrument observations were continued till Sept. 18, when the square bar-micrometer hitherto employed with the 4 $\frac{1}{2}$ -inch telescope was adapted to the large instrument. With this micrometer, whose adjustment and errors of form were carefully attended to, the remaining positions were obtained. The comet was at no time a good object for observation, and in consequence of either bright moonlight or haze, such was particularly the case on Sept. 2, 7, 10, 11, 12; Oct. 6, 7, 11, 25 and 29. On Oct. 25 it approached so close to star No. 59 as to be observed with the greatest difficulty. On the whole I think the positions yielded by the square bar-micrometer will be found more satisfactory than those obtained with the ring. Finlay's comet was observed with the large Equatorial from Oct. 8 to Dec. 30.

I may add that the tail of a large comet was visible on the W.S.W. horizon immediately after sunset on the evenings of the 19th, 20th, and 21st inst. at several places in the neighbouring colonies. At Windsor, however, the past few days have been characterised by dense cloud, with rain, so that no opportunity whatever was afforded for getting even a glimpse of the stranger.

*Winnecke's Comet, 1886.*

1886.	Windsor Mean Time.	Comet—Star. Δ R.A.	Comps.	Comet's App. R.A.	Log. $\frac{p}{P}$	Comet's App. N.P.D.	Log. $\frac{q}{P}$	Red. to App. Place.	Comp. Star.
	h m s	m s		h m s	+	° ' "	+	"	
Aug. 25	7 36 52	+9 26.57	6	13 26 51.82	8.7070	94 2 0.6	9.7204	+0.87	1
25	7 36 52	+8 6.55	6		8.7070		9.7204	+0.87	2
28	7 33 54	-3 30.39	9	13 37 58.72	8.7064	95 58 49.5	9.7088	+0.97	3
29	7 41 37	-2 52.10	7		8.7134		9.7073	+0.98	4
29	7 41 37	-3 59.00	7	13 41 47.91	8.7134	96 38 53.6	9.7073	+0.98	5
Sept. 1	7 30 3	-4 52.50	4	13 53 27.82	8.7058			+1.03	6
1	7 30 3	-7 14.28	4	13 53 27.90	8.7058	98 40 22.7	9.6904	+1.04	7
2	7 22 57	+1 50.73	4	13 57 26.80	8.7000			+1.02	8
2	7 22 57	-8 25.15	4		8.7000		9.6823	+1.06	9
2	7 22 57	-9 2.38	4	13 57 27.70	8.7000	99 21 24.5	9.6823	+1.07	10
5	7 28 2	-2 54.38	8	14 9 47.67	8.7072	101 27 37.6	9.6690	+1.09	11
7	7 12 16	-3 19.87	9	14 18 15.89	8.6929	102 52 40.6	9.6466	+1.12	12
8	7 10 1	+4 10.87	8	14 22 36.35	8.6913	103 35 46.8	9.6382	+1.10	13
8	7 10 1	+3 22.91	8	14 22 36.33	8.6913	103 35 45.6	9.6382	+1.11	14
10	7 13 28	+6 26.57	4	14 31 29.87	8.6968	105 2 14.8	9.6263	+1.13	15
10	7 13 28	+0 36.25	4		8.6968		9.6263	+1.15	16

1886.	Windsor Mean Time.			Comet—Star Δ R.A.			Comet—Star Δ N.P.D.			Comps.			Comet's App. R.A.			Log. $\frac{p}{P}$			Comet's App. N.P.D.			Log. $\frac{q}{P}$			Red. to App. Place.			Comet's Star.		
	h	m	s	m	s	'	"	'	"		h	m	s	+	°	'	"	+	°	'	"	+	s	"	°	'	"	°	'	"
Sept. 10	7	44	1	+0	42.29					3				8.7255								+			+1.15	+0.2				16
10	7	44	1	—8	4.20	+4	28.9			3			14	31	37.64	8.7255			105	3	11.3	9.6518			+1.20	+0.2				17
11	7	28	27	+2	15.25	+3	50.4			7			14	36	6.74	8.7130			105	46	15.0	9.6316			+1.16	+0.2				18
11	7	28	27	+1	51.65	+3	20.3			7			14	36	7.49	8.7130			105	46	12.7	9.6316			+1.17	+0.2				19
12	7	8	52	+2	29.78	+6	5.4			7			14	40	39.93	8.6932			106	29	33.0	9.6058			+1.18	+0.1				20
12	7	8	52	+0	59.72	+6	35.3			7						8.6932						9.6058			+1.19	+0.1				21
15	7	28	26	—4	47.14	—	0	27.5		8						8.7167						9.6003			+1.27	—0.3				22
15	7	34	32	—4	52.29					5						8.7226									+1.27	—0.4				23
16	7	26	15	—1	53.05	+0	44.1			10			14	59	56.45	8.7156			109	25	17.2	9.5891			+1.28	—0.3				24
16	7	26	15	—5	47.88					10			14	59	56.87	8.7156									+1.30	—0.5				25
17	7	14	43	+1	35.19					10			15	4	53.94	8.7039									+1.28	—0.2				26
17	7	14	43	+1	9.65	+0	47.8			10						8.7039						9.5654			+1.28	—0.2				27
18	7	26	27	—9	29.77	—6	23.2			4			15	10	1.35	8.7176			110	52	20.5	9.5705			+1.36	—0.7				28
20	7	25	51	+4	36.25	+9	4.6			5			15	20	26.95	8.7186			112	18	28.3	9.5485			+1.33	—0.3				29
20	7	25	51	+2	52.09	—0	33.2			5			15	20	25.98	8.7186			112	18	27.4	9.5485			+1.34	—0.3				30
20	7	32	10	—2	10.51	+0	19.1			4						8.7251						9.5576			+1.36	—0.6				31
21	7	15	17	—0	51.32	—3	43.1			10			15	25	43.17	8.7073			113	0	58.6	9.5209			+1.38	—0.6				32

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	h m s	m s	s	' "	h m s	h m s	' "	+	° ' "	° ' "	' "	+	s	"
Sept. 22	7 20 35	+2 50'96	+2 50'96	— 2 54'2	15 31 9'65	15 31 9'65	24'2	8'7141	113 43 24'2	113 43 24'2	24'2	9'5169	+1'38	—0'5 33
22	7 20 35	+1 17'15	+1 17'15	+ 6 28'9	15 31 9'58	15 31 9'58	22'7	8'7141	113 43 22'7	113 43 22'7	22'7	9'5169	+1'38	—0'6 34
22	7 20 35	—1 17'10	—1 17'10	+ 8 19'5	15 31 9'60	15 31 9'60	19'5	8'7141	113 43 19'5	113 43 19'5	19'5	9'5169	+1'40	—0'7 35
23	7 20 19	+5 3'09	+5 3'09	+ 8 29'8	15 36 40'40	15 36 40'40	13'4	8'7143	114 25 13'4	114 25 13'4	13'4	9'5035	+1'39	—0'6 36
23	7 20 19	—2 23'77	—2 23'77	+ 3 53'7	15 36 40'64	15 36 40'64	14'1	8'7143	114 25 14'1	114 25 14'1	14'1	9'5035	+1'42	—0'8 37
24	7 24 5	+3 18'67	+3 18'67	— 1 26'2	15 42 16'99	15 42 16'99	40'6	8'7192	115 6 40'6	115 6 40'6	40'6	9'4967	+1'42	—0'7 38
24	7 24 5	—4 30'29	—4 30'29	+ 7 37'9	15 42 17'21	15 42 17'21	44'9	8'7192	115 6 44'9	115 6 44'9	44'9	9'4967	+1'46	—1'0 39
28	7 7 0	+0 12'53	+0 12'53	+ 7 54'6	16 5 31'03	16 5 31'03	38'4	8'6971	117 45 38'4	117 45 38'4	38'4	9'3984	+1'52	—1'2 40
28	7 27 43	+0 18'14	+0 18'14	+ 8 23'5	16 5 36'64	16 5 36'64	7'3	8'7245	117 46 7'3	117 46 7'3	7'3	9'4454	+1'52	—1'2 40
28	7 27 43	—5 38'56	—5 38'56	+ 0 36'8	16 5 36'68	16 5 36'68	8'4	8'7245	117 46 8'4	117 46 8'4	8'4	9'4454	+1'55	—1'4 41
30	7 18 16	—0 48'34	—0 48'34	— 7 19'5	16 17 44'24	16 17 44'24	51'7	8'7121	119 0 51'7	119 0 51'7	51'7	9'3887	+1'57	—1'4 42
30	7 18 16	—2 39'05	—2 39'05	— 0 52'2	16 17 44'39	16 17 44'39	52'0	8'7121	119 0 52'0	119 0 52'0	52'0	9'3887	+1'58	—1'6 43
Oct. 1	7 32 2	+1 31'13	+1 31'13	+ 0 37'3	16 24 0'75	16 24 0'75	22'5	8'7295	119 37 22'5	119 37 22'5	22'5	9'4055	+1'58	—1'5 44
1	7 32 2	—0 32'46	—0 32'46	— 1 0'7	16 24 0'85	16 24 0'85	20'9	8'7295	119 37 20'9	119 37 20'9	20'9	9'4055	+1'59	—1'6 45
5	7 27 28	+0 6'56	+0 6'56	+ 2 12'9				8'7205				9'3126	+1'68	—2'1 46
5	7 27 28	—4 49'66	—4 49'66	— 7 44'4	16 49 42'38	16 49 42'38	34'1	8'7205	121 50 34'1	121 50 34'1	34'1	9'3126	+1'70	—2'3 47
6	7 41 23	+0 12'58	+0 12'58	— 5 39'8				8'7378				9'3364	+1'70	—2'2 48

March 1887.

of Winnecke's Comet, 1886.

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1886.	Windsor Mean Time.	Comet—Star $\Delta$ R.A.	Comet's App. R.A.	Log. $\frac{p}{P}$	Comet's App. N.P.D.	Log. $\frac{q}{P}$	Red. to App. Place.	Comp. Star.
	h m s	m s	h m s		° ' "		s	
Oct. 6	7 42 12	+2 8.75	16 56 23.75	8.7388	122 21 13.0	9.3390	+1.69	49
7	8 19 0	-1 59.98		8.7776		9.4325	+1.73	50
7	8 19 0	-3 5.90		8.7776		9.4325	+1.73	51
11	8 33 5	+1 40.83		8.7883		9.4115	+1.79	52
11	8 33 5	-0 50.18		8.7883		9.4115	+1.80	53
21	8 47 16	+4 4.68	18 40 31.77	8.7859	126 54 51.5	9.3033	+1.93	54
21	8 47 16	-2 18.26	18 40 31.71	8.7859	126 54 52.2	9.3033	+1.96	55
23	9 27 0	+3 25.89	18 54 30.18	8.8157	127 4 4.5	9.4260	+1.96	56
23	9 27 0	+1 6.78	18 54 29.70	8.8157	127 4 6.3	9.4260	+1.97	57
23	10 0 30	-4 5.61	18 54 39.03	8.8338	127 4 13.2	9.5278	+1.99	58
25	8 26 59	+9 1.22	19 7 45.82	8.7486	127 7 6.4	9.1456	+1.95	58
25	8 26 59	-0 11.82	19 7 45.75	8.7486	127 7 7.0	9.1456	+1.99	59
25	8 26 59	-4 0.02	19 7 46.17	8.7486	127 7 5.1	9.1456	+2.01	60
25	9 22 13	+0 4.45	19 8 2.02	8.8083	127 7 10.3	9.3891	+1.99	59
27	8 27 55	+9 19.18	19 21 5.33	8.7419	127 4 27.1	9.1229	+1.97	60
27	8 27 55	+0 15.01	19 32.1 10	8.7419		9.1229	+2.01	61
29	7 43 20	-0 47.22	19 33 53.80	8.6503	126 56 36.1	8.7473	+2.02	62

*Mean places of the Comparison Stars for 1886.0.*

Star.	R.A.		N.P.D.		Authorities.
	$^{\text{h}}$	$^{\text{m}}^{\text{s}}$	$^{\circ}$	$'$	
1	13 17	24.38	94 19	38.9	{ Cape Cat. 1850, 2383; Yarnall 5535; Gr. 7 Yr. Cat. 1864, 1569; Glasgow 3366; Gr. 9 Yr. Cat. 1872, 1223.
2	13 18	44	94 19		Approx. Position per Equatorial, Star = 8 mag.
3	13 41	28.14	96 8	5.2	Cape Cat. 1850, 2451; Yarnall 5670; Schj. 4916 and 4917.
4	13 44	39	96 36		Approx. Position per Equatorial, Star = 8½ mag.
5	13 45	45.93	96 36	27.5	Lamont <sub>3</sub> , 1568; Schj. 4947.
6	13 58	19.29	98 42	34.5	Cape Cat. 1850, 2503; Yarnall 5812.
7	14 0	41.14	98 46	8.5	Gr. Cat. 1850, 883; Cape Cat. 1850, 2511; 2nd Rad. Cat. 1355; Gr. 9 Yr. Cat. 1872, 1285.
8	13 55	35.05	99 23	19.6	Lamont <sub>3</sub> , 1442.
9	14 5	52	99 25		Approx. Position per Equatorial, Star = 8 mag.
10	14 6	29.01	99 21	48.1	Cape Cat. 1850, 2525; 2nd Rad. Cat. 1365; Gr. 9 Yr. Cat. 1864, 1639; Glasgow 3521.
11	14 12	40.96	101 32	8.6	Schj. 5089.
12	14 21	34.64	102 50	44.6	Cape Cat. 1850, 2570; Radcliffe Obs. 1873, 729, and 1874, 800.
13	14 18	24.38	103 33	47.6	Yarnall 5946.
14	14 19	12.31	103 34	12.2	Yarnall 5955.
15	14 25	2.17	105 6	56.6	Lamont <sub>3</sub> , 1570. Lalande's position differs considerably from Lamont's.
16	14 30	53	105 1		Approx. Position per Equatorial, Star = 9½ mag.
17	14 39	40.64	104 58	42.2	{ Cape Cat. 1850, 2618; 2nd Rad. Cat. 1418; Yarnall 6071; Gr. 7 Yr. Cat. 1864, 1677; Gr. 9 Yr. Cat. 1872, 1332; Rad. Obs. 1874, 810.
18	14 33	50.33	105 42	24.4	Lalande 26702.

Star.	R.A. h m s	N.P.D. ° ' "	Authorities.
19	14 34 14.67	105 42 52.2	Lalande 26706 and 26707; Lamont., 264.
20	14 38 8.97	106 23 27.5	Arg.-Oeltzen 13891.
21	14 39 39	106 23	Approx. Position per Equatorial, Star = 9 mag.
22	14 59 50	108 41	" " " Star = $8\frac{1}{2}$ "
23	14 59 57	108 38	" " " Star = $8\frac{1}{2}$ "
24	15 1 48.22	109 24 33.4	Arg.-Oeltzen 14280 and 14281.
25	15 5 43.45	109 21 33.9	{ Arg.-Oeltzen 14348; Rad. Cat. 1845, 3329; Cape Cat. 1850, 2695; 2nd Rad. Cat. 1459; Yarnall 6246; Gr. 7 Yr. Cat. 1864, 1710; Gr. 9 Yr. Cat. 1872, 1365; Stone 8261; Rad. Obs. 1874, 832, and 1882, 332; Cape Obs. 1880, 282, and 1881, 438.
26	15 3 17.47	110 4 53.5	Lalande 27567.
27	15 3 43	110 8	Approx. Position per Equatorial, Star = 9 mag.
28	15 19 29.76	110 58 44.4	Arg.-Oeltzen 14544 and 14545; Wash. Mural Cir. Zone 259, 8; Yarnall 6342.
29	15 15 49.37	112 9 24.0	Wash. Mural Cir. Zone 252, 22.
30	15 17 32.55	112 19 0.9	{ Arg.-Oeltzen 14513; Wash. Mural Cir. Zone 252, 24; Yarnall 6328; Washburn-Palermo Cat. 530. 2 secs. have been subtracted from the W. Mural Cir. Zone R.A.
31	15 22 37	112 18	Approx. Position per Equatorial, Star = 9 mag.
32	15 26 33.11	113 4 42.3	{ Arg.-Oeltzen 14643; Wash. Mural Cir. Zone 175, 11. 1 min. has been added to the R.A. of Wash. Mural Cir. Zone.
33	15 28 17.31	113 46 18.9	Wash. Mural Cir. Zone 174, 14; Washburn-Palermo Cat. 540.
34	15 29 51.05	113 36 54.4	{ Wash. Mural Cir. Zone 174, 15; Washburn-Palermo Cat. 542. 1' has been added to Wash. Mural Cir. Zone N.P.D.
35	15 32 25.30	113 35 0.7	Arg.-Oeltzen 14728.

Star.	R.A. h m s	N.P.D. ° ' "	Authorities.
36	15 31 35.92	114 16 44.2	Arg.-Oeltzen 14715; Wash. Merid. Tr. Zone 239, 25. The N.P.D.s are discordant.
37	15 39 2.99	114 21 21.2	{ Arg.-Oeltzen 14840; Cape Cat. 1850, 2831; 2nd Rad. Cat. 1515; Gr. 9 Yr. Cat. 1872, 1406; Stone 8559.
38	15 38 56.90	115 8 7.5	Arg.-Oeltzen 14838; Wash. Merid. Tr. Zone 166, 15; Wash. Mural Cir. Zone 165, 62.
39	15 46 46.04	114 59 8.0	{ Arg.-Oeltzen 14974 and 5; Wash. Merid. Tr. Zone 166, 18; Wash. Mural Cir. Zone 165, 66; Washburn-Palermo Cat. 563; Cape Cat. 1850, 2866; Yarnall 6544; 2nd Rad. Cat. 1521; Gr. 7 Yr. Cat. 1864, 1780; Gr. 9 Yr. Cat. 1872, 1416; Armagh 1852; Stone 8628; Rad. Obs. 1882, 353. The Wash. Mural Cir. Z. R.A. and Wash. Merid. Tr. Z. N.P.D. rejected.
40	16 5 16.98	117 37 45.0	{ Arg.-Oeltzen 15351; Cape Cat. 1850, 2957; Wash. Mural Cir. Zone 29, 13; Yarnall 6691; 2nd Rad. Cat. 1552; Stone 8807; Rad. Obs. 1880, 351; Cape Obs. 1881, 468.
41	16 11 13.69	117 45 33.0	{ Arg.-Oeltzen 15482; Cape Cat. 1850, 2992; Wash. Mural Cir. Zone 29, 16; Yarnall 6731; Rad. Obs. 1872, 777; 1874, 900; 1875, 694; 1876, 695; Stone 8858.
42	16 18 31.01	119 8 12.6	{ Arg.-Oeltzen 15609, 10, and 11; Cape Cat. 1850, 3022; Wash. Merid. Tr. Zone 117, 8; Wash. Merid. Cir. Zone 94, 22; Wash. Mural Cir. Zone 263, 16; Yarnall 6784; Rad. Obs. 1872, 786; Stone 8931.
43	16 20 21.86	119 1 45.8	{ Arg.-Oeltzen 15643, 4, and 5; Cape Cat. 1850, 3030; Wash. Merid. Tr. Zone 117, 9; Wash. Merid. Cir. Zone 94, 25; Wash. Mural Cir. Zone 263, 19; Yarnall 6794; 2nd Rad. Cat. 1578; Stone 8941. Wash. Merid. Tr. Z. R.A. rejected. There appears to be a systematic error of 1° in the Right Ascension of this zone.
44	16 22 28.04	119 36 46.7	{ Arg.-Oeltzen 15662; Wash. Merid. Tr. Zone 17, 86; Wash. Merid. Cir. Zone 97, 91; Wash. Mural Cir. Zone 263, 20.
45	16 24 31.72	119 38 23.2	{ Arg.-Oeltzen 15694; Wash. Merid. Tr. Zone 17, 88; Wash. Mural Cir. Zone 263, 24; Yarnall 6809. The authorities are very discordant.
46	16 49 34	121 48	Approx. Position per Equatorial, Star = 8 mag.



Star.	R.A. h m s	N.P.D. ° ' "	Authorities.
47	16 54 30.34	121 58 20.8	{ Cape Cat. 1850, 3178; Wash. Merid. Tr. Zone 30, 26; Yarnall 7043; Stone 9253; Rad. Obs. 1880, 370.
48	16 56 9	122 27	Approx. Position per Equatorial, Star = 9 mag.
49	16 54 13.31	122 28 36.6	Wash. Mural Cir. Zone 25, 24.
50	17 5 13	122 49	Approx. Position per Equatorial, Star = 9 mag.
51	17 6 19	122 43	" " " Star = 8½ "
52	17 28 54	124 32	" " " Star = 9 "
53	17 31 25	124 25	" " " Star = 8½ "
54	18 36 25.16	126 49 39.0	Wash. Merid. Tr. Zone 56, 9; Stone 10182.
55	18 42 48.01	126 56 35.0	" " " 56, 11.
56	18 51 2.33	127 15 15.0	{ Cape Cat. 1850, 3716; Wash. Merid. Tr. Zone 56, 13; Wash. Mural Cir. Zone 48, 25; Melb. Cat. 1870, 961; Stone 10309.
57	18 53 20.95	127 13 0.1	Wash. Merid. Tr. Zone 56, 14; Wash. Mural Cir. Zone 48, 26; Yarnall 8056; Stone 10326.
58	18 58 42.65	127 13 32.9	{ Cape Cat. 1850, 3745; Wash. Merid. Tr. Zone 56, 18; Wash. Mural Cir. Zone 48, 28; Yarnall 8108; Melb. Obs. 1880, 302; Stone 10373.
59	19 7 55.58	127 8 38.2	Wash. Merid. Tr. Zone 56, 19; Wash. Mural Cir. Zone 48, 33; Yarnall 8187; Stone 10440.
60	19 11 44.18	127 5 55.7	Wash. Merid. Tr. Zone 56, 20; Wash. Mural Cir. Zone 48, 34; Yarnall 8223; Stone 10459.
61	19 20 49	127 13	Approx. Position per Equatorial, Star = 9 mag.
62	19 34 39.00	126 53 43.9	{ Wash. Merid. Tr. Zone 56, 23; Cordoba Zone 22, 2; Yarnall 8437; Stone 10615. 1' has been subtracted from the first authority for N.P.D.

Windsor, N. S. Wales:  
1887, January 24.

*Elements of Comet 1886 e (Finlay).* By W. H. Finlay, M.A.

The following elements represent my observations of this comet closely. A normal place was deduced from the observations on September 26, 27, 29, and 30, and another from those on December 13, 15, 16 and 17; these were:

Sept. 28.5	$\alpha = 256^{\circ} 48' 38''.2$	$\delta = -26^{\circ} 10' 51''.0$
Dec. 15.5	$\alpha = 336^{\circ} 51' 52''.2$	$\delta = -10^{\circ} 49' 16''.0$

From these, by varying the geocentric distances to satisfy the observations on October 21, November 13, and December 27 (on which dates very good places were available for the comparison stars), I obtained the elements

T = Nov. 22.3918, G.M.T.

$\omega$	$315^{\circ} 5' 47''.0$	} Ecliptic and Mean Equinox 1886.0
$\Omega$	$52^{\circ} 29' 15''.2$	
$i$	$3^{\circ} 1' 38''.6$	
$\phi$	$45^{\circ} 51' 51''.6$	
$\log a$	$0.5482066$	
$\mu$	$534''.1911$	

The representation of the observations on October 21, November 13, and December 27 is

	C - O	
	$d\lambda \text{ as } \beta$	$d\beta$
Oct. 21	+0''.7	+3''.3
Nov. 13	+0.6	+5.1
Dec. 27	-0.8	-2.9

I discontinued my observations when the comet passed to the north of the equator, and was more favourably situated for observation in the northern hemisphere, so that I have no later date than December 27 to compare with the elements. The discordances in latitude are persistent in all the variations of the distances. The heliocentric co-ordinates are

$$\begin{aligned} x &= [9.9996185] r \sin (97^{\circ} 32' 43''.0 + v) \\ y &= [9.9562980] r \sin (8^{\circ} 40' 46''.9 + v) \\ z &= [9.6324689] r \sin (2^{\circ} 28' 49''.5 + v) \end{aligned}$$

*Royal Observatory, Cape of Good Hope:*  
1887, February.